AMENDMENTS TO THE CLAIMS

Listing of Claims:

1. (currently amended) A method for detecting and/or isolating a target nucleic acid molecule having a homopolymeric sequence comprising:

treating a sample containing nucleic acid molecules with an LNA oligonucleotide in a buffer comprising a chaotropic agent to ~~thereby~~ detect and/or isolate a nucleic acid molecule having said homopolymeric sequence wherein the LNA oligonucleotide comprises at least twenty to twenty-five repeating consecutive nucleotides.

2. (currently amended) A method for detecting and/or isolating a target nucleic acid molecule having a repetitive element comprising:

treating a sample containing nucleic acid molecules with an LNA oligonucleotide in a buffer comprising a chaotropic agent to ~~thereby~~ detect and/or isolate a nucleic acid molecule having the repetitive element wherein the LNA oligonucleotide comprises at least twenty to twenty-five repeating consecutive nucleotides.

3. (currently amended) A method for detecting and/or isolating a target nucleic acid molecule having a conserved nucleotide sequence comprising:

treating a sample containing nucleic acid molecules with an LNA oligonucleotide in a buffer comprising a chaotropic agent to ~~thereby~~ detect and/or isolate a nucleic acid molecule having the conserved nucleotide sequence wherein the LNA oligonucleotide comprises at least twenty to twenty-five repeating consecutive nucleotides.

4. (original) The method of any one of claims 1 to 3 wherein a sample comprising the nucleic acid molecules is treated with a lysing buffer comprising a chaotropic agent to lyse cellular material in the sample.

5. (previously presented) The method of any one of claims 1 to 3 wherein the LNA oligonucleotide is covalently attached to a solid support.

6. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide is synthesized with an anthraquinone moiety and a linker at the 5'-end or the 3'-end of said oligonucleotide.

7. (previously presented) The method of claim 6 wherein said linker is selected from the group consisting of one or more of a hexaethylene glycol monomer, dimer, trimer, tetramer, pentamer, hexamer, or higher hexaethylene glycol polymer; a poly-T sequence of 10-50 nucleotides in length; a poly-C sequence of 10-50 nucleotides in length or longer; and a non-base sequence of 10-50 nucleotide units in length or longer.

8. (previously presented) The method of claim 5 wherein said solid support is a polymer support selected from the group consisting of a microtiter plate, polystyrene beads, latex beads, a polymer microscope slide or a polymer-coated microscope slide and a microfluidic slide.

9. (currently amended) The method of claim 1 wherein the LNA oligonucleotide ~~[capture probe]~~ is complementary to a homopolymeric ~~nucleotide~~ nucleic acid sequence comprising at least ~~about~~ one nucleobase that is different than the bases comprising the homopolymeric nucleic acid sequence.

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (currently amended) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises at least about thirty repeating consecutive nucleotides.

14. (currently amended) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises at least ~~about~~ forty repeating consecutive nucleotides.

15 (currently amended) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises at least ~~about~~ fifty repeating consecutive nucleotides.

16. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide molecule is complementary to a nucleotide sequence consisting substantially of a poly(A) nucleotide sequence.

17. (currently amended) The method of claim 15, wherein said LNA oligonucleotide ~~[probe]~~ is synthesized with an anthraquinone moiety and a linker and at its 5'-end, where said linker is selected from the group comprising one or more of a hexaethylene glycol monomer, dimer , trimer, tetramer, pentamer, hexamer, or higher hexaethylene glycol polymer; a poly-T sequence of 10-50 nucleotides in length or a poly-C sequence of 10-50 nucleotides in length or longer; or a non-base sequence of 10-50 nucleotide units in length or longer; and a covalent coupling onto a solid polymer support of said LNA oligonucleotide is carried out via excitation of the anthraquinone moiety using UV light.

18. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide molecule is complementary to a nucleotide sequence consisting substantially of a poly(T) nucleotide sequence.

19. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide molecule is complementary to a nucleotide sequence consisting substantially of a poly(G) nucleotide sequence.

20. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide molecule is complementary to a nucleotide sequence consisting substantially of a poly(U) nucleotide sequence.

21. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide molecule is complementary to a nucleotide sequence consisting substantially of a poly(C) nucleotide sequence.

22. (currently amended) The method of claim 20 ~~18~~, wherein the LNA oligonucleotide is compound number 3 (LNA_3.T) comprising the sequence 5'-biotin-TttTttTttTttTttTttTt (SEQ ID NO: 3). ~~selected from the following table:~~

~~Comp. No.~~	~~Oligo Name:~~	~~Sequence 5'-:~~
~~2~~	~~LNA_2.T~~	~~5'-biotin-TtTtTtTtTtTtTtTtTtTt (SEQ ID NO: 2)~~
~~4~~	~~LNA_T_{10}~~	~~5'-biotin-TTTTTTTTTT (SEQ ID NO: 4)~~
~~5~~	~~LNA_T_{15}~~	~~5'-biotin-TTTTTTTTTTTTTT (SEQ ID NO: 5)~~
~~6~~	~~LNA_4.T~~	~~5'-biotin-ttTttTttTttTttTt (SEQ ID NO: 6)~~
~~7~~	~~LNA_5.T~~	~~5'-biotin-tttTtttTtttTtttTt (SEQ ID NO: 7)~~
~~8~~	~~LNA_T_{20}~~	~~5'-biotin-TTTTTTTTTTTTTTTTTT (SEQ ID NO: 8)~~
~~9~~	~~LNA_TT~~	~~5'-biotin-ttTTttTTttTTttTTt (SEQ ID NO: 9)~~
~~10~~	~~LNA_TTT~~	~~5'-biotin-ttTTTttttTTTttttTTTt (SEQ ID NO: 10)~~

23. (withdrawn) The method of claim 18, wherein the LNA oligonucleotide molecule is selected from the following table:

Comp. No.	Oligo Name:	Sequence 5'-:
11	AQ-HEG_3-2.T	AQ-HEG_3-TtTtTtTtTtTtTtTtTtTt

		(SEQ ID NO: 2)
12	AQ-t15-2.T	AQ-t15-TtTtTtTtTtTtTtTtTtTt (SEQ ID NO: 12)
13	AQ-c15-2.T	AQ-c15-TtTtTtTtTtTtTtTtTtTt (SEQ ID NO: 14)
14	AQ-t10-NB5-2.T	AQ-t10-NB5-TtTtTtTtTtTtTtTtTtTt (SEQ ID NOS 15 & 2, respectively)

wherein AQ refers to anthraquinone, HEG refers to hexa-ethylene glycol, t15 (SEQ ID NO: 16) refers to 15-mer deoxy-thymine, c15 (SEQ ID NO: 17) refers to 15-mer deoxy cytosine, t10-NB5 (SEQ ID NO: 15) refers to 10-mer deoxy-thymine 5-mer non-base, and t refers to DNA thymine and T refers to LNA thymine.

24. (withdrawn) The method of claim 23, wherein the LNA oligonucleotide is selected from the group of oligonucleotides corresponding to Compounds ~~2 to 10~~ 3 herein having an anthraquinone in the 5' position instead of biotin.

25 (currently amended) The method of claim 20 ~~18~~, wherein the LNA oligonucleotide is selected from the group consisting of a oligonucleotides corresponding to Compounds ~~2 to 18~~ 3 herein having an anthraquinone in the 5' position and a linker which is selected from the group consisting of one or more of a hexaethylene glycol monomer, dimer, trimer, tetramer, pentamer, hexamer, or higher hexaethylene glycol polymer; a poly-T sequence of 10-50 nucleotides in length and a poly-C sequence of 10-50 nucleotides in length or longer.

26. (currently amended) The method of claim 20 ~~18~~, wherein the LNA oligonucleotide molecule is selected from the group consisting of oligonucleotides corresponding to Compounds 2 to 10 herein without the biotin substitution in the 5' position.

27. (previously presented) The method of claim 2 wherein the LNA oligonucleotide is complementary to a repetitive nucleotide sequence comprising at least ~~about~~ one nucleobase that is different than the bases comprising the repetitive sequence.

28. (currently amended) The method of claim 3 wherein the LNA oligonucleotide is complementary to a conserved nucleotide sequence comprising at least ~~about~~ one nucleobase that is different than the bases comprising the conserved nucleic acid sequence.

29. (previously presented) The method of anyone of claims 1 through 3 wherein the LNA oligonucleotide comprises at least one nucleotide having a nucleobase that is different from the nucleobases of the remaining oligonucleotide sequence.

30. (previously presented) The method of any one of claims 1 through 3 wherein the −1 residue of the LNA oligonucleotide molecule 3' and/or 5' end is an LNA residue.

31. (currently amended) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises at least ~~about~~ one or more alpha-L LNA monomers.

32. (currently amended) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises at least ~~about~~ one or more xylo-LNA monomers.

33. (currently amended) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises at least ~~about~~ 20 to 50 percent LNA residues based on total residues of the LNA oligonucleotide.

34. (currently amended) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises at least ~~about~~ two or more consecutive LNA molecules.

35. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises modified and non-modified nucleotide molecules.

36. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises a compound of the formula:

$$5'\text{-}Y^{q}\text{-}(X^{p}\text{-}Y^{n})_{m}\text{-}X^{p}\text{-}Z\text{-}3'$$

wherein X is an LNA monomer, Y is a DNA monomer; Z represents an optional DNA monomer ; p is an integer from about 1 to about 15; n is an integer from about 1 to about 15 or n represents 0; q is an integer from about 1 to about 10 or q = 0; and m is an integer from about 5 to about 20.

37. (currently amended) The method of any one of claims 1 through 3 wherein ~~the~~ an association constant (K_a) of the LNA oligonucleotide to a complementary strand is higher than the association constant of complementary strands of a double stranded molecule containing no LNA.

38. (currently amended) The method of any one of claims 1 through 3 wherein the an association constant of the LNA oligonucleotide to a complementary strand is higher than the disassociation constant (K_d) of the complementary strands of the target sequence in a double stranded molecule containing no LNA.

39. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide is complementary to the sequence it is designed to detect and/or isolate.

40. (previously presented) The method of claim 39 wherein the LNA oligonucleotide has at least one base pair difference to a complementary sequence it is designed to detect and/or isolate.

41. (previously presented) The method according to claim 40 wherein the LNA oligonucleotide can detect at least ~~about~~ one base pair difference between a complementary poly-repetitive base sequence and the LNA/DNA oligonucleotide.

42. (currently amended) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide comprises a fluorophore moiety and a quencher moiety, positioned in such a way that a hybridized state of the oligonucleotide can be distinguished from an unbound state of the oligonucleotide by an increase in the fluorescent signal from ~~the~~ a nucleotide.

43. (currently amended) The method of any one of claims 1 through 3, wherein ~~the~~ a T_m of the LNA oligonucleotide is between about 50°C to about 70°C when the LNA oligonucleotide hybridizes to its complementary sequence.

44. (previously presented) The method of claim 4, wherein the chaotropic agent is guanidinium thiocyanate.

45. (currently amended) The method of claim 44 wherein ~~the the concentration of the~~ guanidinium thiocyanate is present at a concentration of at least ~~about~~ 2M.

46. (currently amended) The method of claim 44 wherein ~~the concentration of the~~ guanidinium thiocyanate is present at a concentration of at least ~~about~~ 3M.

47. (currently amended) The method of claim 44 wherein ~~the concentration of the~~ guanidinium thiocyanate is present at a concentration of at least ~~about~~ 4M.

48. (previously presented) The method of claim 44 wherein the LNA oligonucleotide hybridizes to the target nucleic acid molecule at a temperature in the range of 20 – 65 °C.

49. (previously presented) The method of claim 48 wherein the LNA oligonucleotide hybridizes to the target nucleic acid molecule at about 20°C.

50. (previously presented) The method of claim 48 wherein the LNA oligonucleotide hybridizes to the target nucleic acid molecule at about 37°C.

51. (previously presented) The method of claim 48 wherein the LNA oligonucleotide hybridizes to the target nucleic acid molecule at about 55°C.

52. (previously presented) The method of claim 48 wherein the LNA oligonucleotide hybridizes to the target nucleic acid molecule at about 60°C.

53. (previously presented) The method of any one of claims 1 through 3 wherein the LNA oligonucleotide is adapted for use as a TaqMan probe or Molecular Beacon.

54. (previously presented) The method of any one of claims 1 through 3, wherein the LNA oligonucleotide hybridizes to complementary sequences of eukaryotic RNA.

55. (currently amended) The method of [[of]] claim 1 [[55]] wherein the LNA oligonucleotide is complementary to poly(A) tails in eukaryotic mRNA and where the ~~said~~ LNA oligonucleotide is synthesized with an anthraquinone moiety and a linker at the 5'-end of said oligonucleotide, wherein said linker is selected from the group consisting of one or more of a hexaethylene glycol monomer, dimer, trimer, tetramer, pentamer, hexamer, or higher hexaethylene glycol polymer; a poly-T sequence of 10-50 nucleotides in length; a poly-C sequence of 10-50 nucleotides in length or longer; and a

non-base sequence of 10-50 nucleotide units in length or longer; and said LNA oligonucleotide is covalently coupled to a solid polymer support via excitation of the anthraquinone moiety using UV light.

56. (previously presented) The method of claim 55, wherein the eukaryotic mRNA is isolated using the covalently coupled LNA oligonucleotide, and detected with nucleic acid probes, using

(i) chemiluminiscence,

(ii) bioluminescence,

(iii) ligands incorporated into the nucleic acid probes, or

(iv) biotin-labeled nucleic acid probes.

57. (previously presented) The method of claim 56, wherein the eukaryotic mRNA is detected using a nucleic acid probe comprising LNA combined with a tyramide signal amplification system.

58. (currently amended) The method of claim 56, wherein the eukaryotic mRNA is detected using a nucleic acid probe comprising LNA, wherein a eukaryotic cDNA produced from the eukaryotic mRNA contains ~~containing~~ a capture sequence complementary ~~overhang~~ to a free arm in a fluorescent dendrimer wherein ~~or a branched oligonucleotide conjugated with several digoxigenin, fluorescein isothiocyanate or biotin molecules or fluorochrome molecules, combined with alkaline phosphatase conjugated or horse radish peroxidase conjugated anti-digoxigenin, anti-fluorescein isothiocyanate antibodies or streptavidin or~~ detection of fluorescence from the excited fluorochromes indicates eukaryotic mRNA is in the sample.

59. (previously presented) The method of claim 55, further comprising contacting the sample with a polymerase and at least one nucleotide.

60. (previously presented) The method of claim 59, further comprising performing said contacting under conditions suitable for generating a plurality of copies of said eukaryotic mRNA.

61. (previously presented) The method of claim 60, wherein said conditions comprise exposing the sample to a constant temperature.

62. (previously presented) The method of claim 60, wherein said conditions comprise cycling the temperature of the sample.

63. (previously presented) The method of claim 60, wherein the polymerase comprises a thermally stable polymerase.

64. (previously presented) The method of claim 59 or 63, wherein the polymerase comprises a reverse transcriptase.

65. (original) The method of claim 59, wherein the LNA oligonucleotide comprises a label.

66. (original) The method of claim 59, wherein the nucleic acid molecule or LNA oligonucleotide is bound to a solid support.

67. (original) The method according to claim 59 or 65, wherein the at least one nucleotide comprises a label.

68. (original) The method of claim 59, wherein the nucleic acid molecule is comprised with a cell and wherein the cell is stably associated with a solid support.

69. (previously presented) The method of claim 60, wherein the LNA oligonucleotide comprises a fluorescent reporter molecule at one end of the LNA oligonucleotide and a quencher molecule at another end of the oligonucleotide, wherein

the quencher is in sufficient proximity to the reporter to quench the fluorescence of the reporter molecule.

70. (previously presented) The method of claim 60, wherein generating the plurality of copies is detected by detecting increased fluorescence of the reporter molecule.

71. (original) The method of claim 70, wherein the LNA oligonucleotide is cleaved during the step of generating the plurality of copies.

72. (previously presented) The method of claim 59, wherein the polymerase is rTh polymerase.

73. (previously presented) The method according to claim 59, further comprising adding at least one primer which hybridizes to a sequence in the nucleic acid molecule 5' or 3' of the homopolymeric sequence.

74. (previously presented) The method of any one of claims 1 through 3, wherein the LNA oligonucleotide comprises a fluorescent reporter molecule at one end of the oligonucleotide and a quencher molecule at a second end and wherein the reporter molecule is quenched by the quencher molecule when the LNA oligonucleotide is not hybridized to the nucleic acid molecule.

75. (original) The method of claim 74, wherein hybridization of the LNA oligonucleotide is detected by detecting increased fluorescence of the reporter molecule.

76. (original) The method of claim 74, wherein the LNA oligonucleotide comprises, in addition to a sequence sufficiently complementary to said nucleic acid molecule to specifically hybridize to said nucleic acid molecule, a first and second complementary sequence which specifically hybridize to each other when the

oligonucleotide is not hybridized to the nucleic acid molecule, bringing said quencher molecule in sufficient proximity to said reporter molecule to quench fluorescence of the reporter molecule.

77. (previously presented) The method of claim 59, further comprising adding a DNA polymerase, RnaseH and E. coli DNA ligase after conversion of the eukaryotic polyadenylated mRNA to first strand complementary DNA under conditions suitable for generating double stranded complementary DNA

78. (original) The method of claim 77 further comprising cloning of said double stranded DNA molecules into a cloning vector thereby generating a library of double stranded complementary DNAs

79. (previously presented) The method of claim 77 where the LNA oligonucleotide complementary to the poly(A) tail sequence in eukaryotic mRNA contains an anchor sequence for a RNA polymerase.

80. (original) The method of claim 78 further comprising adding an RNA polymerase, such as T7 RNA polymerase, under conditions suitable for generating a plurality of RNA copies of said nucleic acid molecule.

81. (withdrawn) A kit for detecting and/or isolating a nucleic acid molecule in a sample comprising:

a. an LNA oligonucleotide comprising a nucleotide sequence sufficiently complementary to a target nucleic acid molecule which comprises a homopolymeric sequence, a repetitive sequence and/or a conserved sequence, to specifically hybridize to the nucleic acid molecule; and

b. a label.

82. (withdrawn) The kit of claim 81, wherein the label is coupled to the LNA oligonucleotide, or to a molecule which is capable of hybridizing to the LNA molecule, or

to a nucleotide which can be incorporated into a primer extension product comprising the LNA oligonucleotide.

83. (withdrawn) The kit of claim 81, wherein the kit further comprises one or more of a polymerase, at least one nucleotide, at least one primer sequence capable of hybridizing to the nucleic acid molecule or to the LNA oligonucleotide, a buffer, Mg^{2+}, UNG, a control nucleic acid molecule, a nuclease, a restriction enzyme, a solid support, a capture molecule for binding the nucleic acid molecule to a solid support, a capture molecule for binding the LNA oligonucleotide to a solid support, a tyramide amplification molecule, a dendrimer, and a chaotropic agent.

84. (withdrawn) The kit of claim 81, wherein the LNA molecule comprises the formula:

$$5'\text{-}Y^{q}\text{-}(X^{p}\text{-}Y^{n})_{m}\text{-}X^{p}\text{-}Z\text{-}3'$$

wherein X is an LNA monomer, Y is a DNA monomer; Z represents an optional DNA monomer ; p is an integer from about 1 to about 15; n is an integer from about 1 to about 15 or n represents 0; q is an integer from about 1 to about 10 or q = 0; and m is an integer from about 5 to about 20.

85. (withdrawn) The kit of claim 81, wherein the nucleic acid molecule is a eukaryotic RNA.

86. (withdrawn) The kit according to claim 81, wherein the LNA oligonucleotide specifically binds to a poly(A) tail sequence in eukaryotic RNA.

87. (withdrawn) The kit of claim 81, wherein the LNA oligonucleotide is an anchor primer.

88. (withdrawn) The kit of claim 81, wherein the LNA is a TaqMan probe or a molecular beacon.

89. (withdrawn) The kit of claim 81, wherein the polymerase is a thermally stable DNA polymerase or a thermally stable reverse transcriptase.

90. (previously presented) The method of claim 54, wherein the LNA oligonucleotide hybridizes to complementary sequences of yeast RNA.

91. (previously presented) The method of claim 54, wherein the LNA oligonucleotide hybridizes to complementary sequences of mRNA, rRNA, and/or tRNA.

92. (currently amended) A method for amplifying a target nucleic acid molecule ~~the nucleotide sequence which is~~ complementary to a LNA oligonucleotide ~~capture probe~~, the method comprising:

providing a sample containing nucleic acid molecules having repetitive base sequences; and,

contacting the nucleic acid molecules from the sample with at least one LNA oligonucleotide wherein the LNA oligonucleotide comprises at least twenty to twenty-five repeating consecutive nucleotides, in a buffer comprising a chaotropic agent ~~capture probe~~ to capture target nucleic acid molecules; and,

subjecting the captured nucleic acids to polymerase chain reaction, using primers to amplify the captured nucleic acid molecules.

93. (currently amended) The method of claim 92 [[87]] wherein multiple primers are used in multiplex PCR.

94. (withdrawn) A kit for isolating a target nucleic acid having a repetitive or homopolymeric base sequence, comprising:

an LNA oligonucleotide complementary to the target nucleic acid; and

a substrate for immobilizing the LNA oligonucleotide.

95. (withdrawn) The kit of claim 94 wherein the substrate is a microchip array.

96. (withdrawn) The kit of claim 94, wherein the LNA oligonucleotide is complementary to a homopolymeric nucleotide sequence comprising at least about one nucleobase that is different than the bases comprising the homopolymeric nucleic acid sequence.

97. (withdrawn) The kit of claim94, wherein the LNA oligonucleotide comprises at least about five repeating consecutive nucleotides.

98. (withdrawn) The kit of claim 94, wherein the LNA oligonucleotide comprises at least about ten repeating consecutive nucleotides.

99. (withdrawn) The kit of claim 94, wherein the LNA oligonucleotide comprises at least about twenty to twenty-five repeating consecutive nucleotides.

100. (withdrawn) The kit of claim 97 wherein the LNA oligonucleotide molecule is complementary to a nucleotide sequence consisting substantially of a poly(A) nucleotide sequence.

101. (withdrawn) The kit of claim 97, wherein the LNA oligonucleotide molecule is complementary to a nucleotide sequence consisting substantially of a poly(T) nucleotide sequence.

102. (withdrawn) The kit of claim 97, wherein the LNA oligonucleotide molecule is complementary to a nucleotide sequence consisting substantially of a poly(G) nucleotide sequence.

103. (withdrawn) The kit of claim 97, wherein the LNA oligonucleotide is complementary to a nucleotide sequence consisting substantially of a poly(U) nucleotide sequence.

104. (withdrawn) The kit of claim 97, wherein the LNA oligonucleotide is complementary to a nucleotide sequence consisting substantially of a poly(C) nucleotide sequence.

105. (withdrawn) The kit of claim 94, wherein the LNA oligonucleotide is substantially homologous to the target nucleic acid sequence.

106. (withdrawn) The kit of claim 94, wherein the LNA oligonucleotide hybridizes to a target nucleic acid sequence in the presence of a chaotropic agent.

107. (withdrawn) The kit of claim 106, wherein the chaotropic agent is guanidinium thiocyanate.

108. (withdrawn) The kit of claim 106, wherein the concentration of the guanidinium thiocyanate is at least between about 2M to about 5M.

109. (withdrawn) The kit of claim 94 wherein the LNA oligonucleotide hybridizes to the repetitive or homopolymeric sequence at a temperature in the range of between about 20 – 65 °C.

110. (currently amended) A method for isolating RNA from an infectious ~~disease~~ organism[[s]] wherein the genome of the infectious ~~disease~~ organism is comprised of RNA, said genome comprising a consecutively repeating nucleic acid base sequence, the method comprising:

providing a sample containing genomic RNA; ~~and,~~

treating the sample with a lysing buffer containing a chaotropic agent to lyse a cell ~~cellular material~~ in the sample, dissolve ~~the~~ cellular components, and denature the genomic RNA in the sample; and,

contacting genomic RNA released from the sample with at least one LNA oligonucleotide ~~capture probe~~, wherein the ~~capturing probe~~ oligonucleotide wherein the LNA oligonucleotide comprises at least twenty to twenty-five repeating consecutive

nucleotides and is substantially complementary to the consecutively repeating nucleic acid base in the genomic RNA.

111. (currently amended) The method of claim 110 ~~105~~, wherein the chaotropic agent is guanidinium thiocyanate.

112. (currently amended) The method of claim 111 ~~106~~, wherein ~~the concentration of the~~ guanidinium thiocyanate is present at a concentration between about 2M to about 5M.

113. (currently amended) The method of claim 110 ~~105~~ wherein ~~the~~ a T_m of the at least one LNA oligonucleotide capture probe when bound to its complementary genomic RNA sequence is between about 55°C to about 70°C.

114. (currently amended) The method of claim 110 ~~105~~, wherein the genomic RNA is protected from degradation by RNAse inhibitors in the presence of the chaotropic agent.

115. (currently amended) The method of claim 110 ~~105~~, wherein the genomic RNA is protected from degradation by RNAse inhibitors when hybridized to the at least one LNA oligonucleotide capture probe.

116. (currently amended) The method of claim 110 ~~109~~, wherein the genomic RNA is isolated from a retrovirus[[es]].

117. (currently amended) The method of claim 116 ~~111~~, wherein the retrovirus is HIV.

118. (currently amended) The method of claim 110 ~~109~~, wherein the isolated genomic RNA is used to genotype RNA viruses.

119. (currently amended) The method of claim 110 ~~109~~, wherein the isolated genomic RNA is used for diagnosis of an infectious disease organism in a patient suffering from an infectious disease.

120. (withdrawn) A composition comprising an LNA/DNA mixmer oligonucleotide capture probe wherein the LNA/DNA mixmer comprises at least about ten repeating consecutive nucleotides.

121. (withdrawn) The composition according to claim 115, wherein the LNA/DNA oligonucleotide mixmer comprises at least about twenty-five repeating consecutive nucleotides.

122. (withdrawn) The composition according to claim115, wherein the LNA/DNA oligonucleotide mixmer is complementary to a poly(G) sequence.

123. (withdrawn) The composition according to claim 115, wherein the LNA/DNA oligonucleotide mixmer is complementary to a poly(U) sequence.

124. (withdrawn) The composition according to claim 115, wherein the LNA/DNA oligonucleotide molecule is complementary to a poly(C) sequence.

125. (withdrawn) The composition according to claims 115 , wherein the LNA/DNA oligonucleotide molecule is complementary to a poly(A) sequence.

126. (withdrawn) The composition according to claim 115, wherein the LNA/DNA oligonucleotide molecule is complementary to a poly(T) sequence.

127. (currently amended) The method of any of claims 1 through 3, wherein the detection and/or isolation of a nucleic acid is carried out under high stringency hybridisation conditions using low salt concentration, ~~optionally~~ after treating the sample with a lysing buffer comprising a chaotropic agent.

128. (currently amended) The method of claim 127 ~~122~~ wherein said chaotropic agent is GuSCN ~~in~~ at a concentration of at least 4 M.

129. (currently amended) The method of claim 127 ~~122~~ the method further comprises the step of binding the LNA oligonucleotide to nucleic acids from the sample in a binding buffer containing NaCl or LiCl.

130. (currently amended) The method of claim 129 ~~124~~ where NaCl or ~~the~~ LiCl is present at a concentration ~~is~~ less than 100 mM.

131. (currently amended) The method of claim 129 ~~125~~ where NaCl or ~~the~~ LiCl is present at a concentration ~~is~~ less than 50 mM.

132. (currently amended) The method of claim 129 ~~125~~ wherein NaCl or LiCl is present at a concentration ~~is~~ less than 25 mM.

133. (currently amended) The method of claims 127 ~~122 through 128~~ wherein detection or hybridisation is carried out at at least 25 °C.

134. (currently amended) The method of claims 127 ~~122 through 128~~ wherein detection or hybridisation is carried out at at least 37 °C.

135. (currently amended) The method of claims 127 ~~122 through 128~~ wherein detection or hybridisation is carried out at at least 50 °C.

136. (previously presented) The method according to claim 56 comprising detecting chemiluminiscence using enzyme-conjugated nucleic acid probes.

137. (previously presented) The method according to claim 56 comprising detecting bioluminescence using firefly or bacterial luciferase or green fluorescent protein as reporter molecule.

138. (cancelled)

139. (previously presented) The method according to claim 56 comprising detecting digoxigenin (DIG), fluorescein isothiocyanate (FITC), or biotin incorporated into the nucleic acid probes.

140. (previously presented) The method of claim 79 wherein the RNA polymerase comprises a T7 RNA polymerase.